

DWIGHT D. EISENHOWER LIBRARY  
ABILENE, KANSAS

CLIFFORD COOK FURNAS

Accession 71 – 35  
Processed by: JAW  
Date Completed: 2-14-72

The papers of Clifford Cook Furnas, educator, engineer, Assistant Secretary of the Department of Defense for Research and Development, were deposited in the Eisenhower Library in October 1970, by Mrs. Sparkle M. Furnas. In April 1970, Mrs. Furnas executed an instrument of gift for these papers.

Linear feet shelf space occupied: 7.6  
Approximate Number of pages : 15,200  
Approximate number of items : 7,650

Literary rights in the unpublished writings of Clifford C. Furnas in these papers in the Eisenhower Library are dedicated to the people of the United States.

By agreement with the donor the following classes of documents will be withheld from research use:

1. Papers relating to the family and private business affairs.
2. Papers relating to the family and private business affairs of other persons who have had correspondence with Clifford C. Furnas.
3. Papers relating to investigations of individuals or to appointments and personnel matters.
4. Papers containing statements made by or to Dr. Furnas in confidence unless in the judgment of the Director of the Dwight D. Eisenhower Library the reason for the confidentiality no longer exists.
5. All other papers which contain information or statements that might be used to injure, harass, or damage any living person.

## SCOPE AND CONTENT NOTE

The papers of Clifford Cook Furnas span the years 1926 to 1969, but the bulk and most significant parts cover the years 1952 to 1969, when Dr. Furnas was associated with various Department of Defense research activities.

The pre-Eisenhower Administration portion of the papers consists of speeches and articles written for various professional organizations, as well as business and social meetings. The subjects of these papers usually concern problems in chemical engineering techniques, procedures, and the role of science and technology in society.

Two-thirds of the papers concern Dr. Furnas' activities on various Defense Department science advisory panels and committees. This series of files includes correspondence, reports, Congressional testimony, minutes of meetings, along with speech and article files maintained while he was serving as Assistant Secretary of Defense for Research and Development, 1955-1957. They also pertain to his activities on various science advisory boards, as Chairman of the Defense Science Board, and as science advisor to the House of Representatives. This portion also includes some correspondence, reports, speeches, and articles concerning the activities of the National Academy of Engineering and other professional organizations.

Subjects in these papers include the role of science and technology in the Department of Defense; the impact of science and technology on regional development; problems in aircraft construction; a study of Department of Defense in House Labs; the appointment of Frank Newbury as Furnas' successor as Assistant Secretary of Defense; the relationship of the National Academy of Engineering to the National Research Council and the National Academy of Sciences; and various scientific and technological problems within the Department of Defense arsenals and laboratories. Correspondents include George B. Kistiakowsky, James R. Killian, Elwood P. Quesada, Donald A. Quarles, Senator Henry M. Jackson, T. Keith Glennan, Lt. General Arthur G. Trudeau, Thomas Gates, Lawson McKenzie, Major General Leslie E. Simon, Lt. General Don A. Prett, Edward L. Glodeck, Congressman Emilie Q. Daddaris, Dr. Chauncy Starr, Frederick Seitz, and Eric Walker.

Dr. Furnas was still actively engaged in the Defense Department science advisory programs after January 1961, and the correspondence after that date contains additional information on their activities and functions.

Approximately one hundred photographs and eight printed items received with the collection were separated and transferred to the Audio-Visual and Book collections of the Eisenhower Library.

## BIOGRAPHICAL SKETCH

Born: October 24, 1900 at Sheridan, Indiana

Died: April 27, 1969 at Amsterdam, Holland

Married: Sparkle Moor Furnas

### Education:

B.S., with honors, Purdue, 1922

Ph.D., University of Michigan, 1926

Honorary Doctor of Engineering, Purdue, 1946

Honorary Doctor of Engineering, University of Michigan 1957

Honorary Doctor of Laws, Alfred University, 1958

Honorary Doctor of Science, Thiel College, 1960

Degree Honoris Causa, University National de Asuncion, 1963

Olympic Games, Antwerp, 1920

Big 10 Conference Medal, 1922, for best combined scholastic and athletic record

### Academic Career:

1922-1924 Teacher of Mathematics, Shattuck School, Minnesota

1924-1925 Research Chemist, U.S. Steel Corporation

1926-1931 Physical Chemist, U.S. Bureau of Mines

1931-1941 Associate Professor of Chemical Engineering, Yale University

1941-1942 National Defense Research Committee, technical aide

1943-1946 Director of Curtiss-Wright Aeronautical Research Laboratory at Buffalo, New York

1946-1954 Director and Executive Vice President of Cornell Aeronautical Laboratory

1954-1962 Chancellor, University of Buffalo

1962-1966 President, State University of New York at Buffalo

1962-1966 President, Western New York Nuclear Research

1966-1969 President Emeritus, State University of New York at Buffalo

### Government Career:

1952-1953 Chairman, Guided Missile Commission, Research and Development Board

1954-1957 Chairman, Department of Defense Advisory Panel on Aeronautics

1954-1969 Member, U.S. Army Science Advisory Panel

1955-1957 Member National Advisory Committee for Aeronautics

1955-1957 Assistant Secretary of Defense for Research and Development

1956-1957 Chairman, Air Navigation Development Board

1957-1969 Member, Defense Science Board

1958-1969 Member, Naval Research Advisory Committee

1961-1965 Chairman, Defense Science Board

1961-1969 Chairman, New York Advisory Council, Industrial Research and Development

1968-1969 Vice-Chairman, National Research Council

Author:

- \*America's Tomorrow (1932)
- \*The Unfinished Business of Science (1935)
- \*The Next Hundred Years (1936)
- \*Man, Bread and Destiny (1937)
- Technological Trends and National Policy, section on metallurgy (1937)
- \*The Storehouse of Civilization (1939)
- \*The Individual and the World (1940)
- \*Excerpts from Our Intellectual World Sections 9-13, Division II of The Individual and the World (1940)
- \*Research in Industry (1948)
- The Engineer (1966)

\* In the Book Collection of the Eisenhower Library.

#### DESCRIPTION OF SERIES

<u>Box No.</u>	<u>Series</u>
----------------	---------------

1-14	Organizations, 1952-1969, 14 containers.
------	--

Letters and reports sent and received, alphabetically arranged by title of the government agency or professional organization. Committees and subcommittees are filed in alphabetical order under the agency or organization concerned with their work. Since most of Furnas' work was concerned with the Department of Defense, the Defense agencies, such as the Department of the Army, the Department of the Navy, and the Department of the Air Force have been listed as separate entries. Only when an agency, such as the Defense Science Board, is concerned with the whole Department of Defense is that agency listed under "Department of Defense." In most cases, the correspondence, in chronological order, is listed first and is followed by the reports of the agency, committee, or subcommittee.

15-18	Speeches, 1936-1969, 4 containers
-------	-----------------------------------

Correspondence, copies of the speech, and, when present, printed/published copies of the speech, filed in chronological order.

19	Articles, 1926-1969, 1 container.
----	-----------------------------------

Chronologically arranged file of published articles. These articles are primarily concerned with chemical engineering techniques and problems, American missile development, and the role of science and research in society. At the end of the series there is a folder containing a biography and obituary of Dr. Furnas.

## CONTAINER LIST

<u>Box No.</u>	<u>Contents</u>
----------------	-----------------

	ORGANIZATIONS
--	---------------

- |   |  |
|---|--|
| 1 | A.F. Air Research & Development Command (ARDC), 1960<br><br>A.F. Air University-Board of Visitors, 1955-60<br><br>A.F. Air University Pamphlets<br><br>A.F. Scientific Advisory Board, 1963<br><br>Army. Ordnance Advisory Com., 1952-53<br><br>Army. Ordnance Advisory Com., 1954<br><br>Army. Ordnance Advisory Com., 1955<br><br>Army Scientific Advisory Panel (ASAP). Gen. Corr., 1958  |
| 2 | Army. Scientific Advisory Panel (ASAP). Gen. Corr., 1960-63<br><br>Army. Army Scientific Advisory Panel (ASAP). Gen. Corr., 1964-65<br><br>Army. Army Scientific Advisory Panel(ASAP). Gen. Corr., 1966-68<br><br>Army. Army Scientific Advisory Panel (ASAP). Gen. Corr., 1969<br><br>Army. Army Scientific Advisory Panel (ASAP). Ad Hoc Com., 1963-64<br><br>Army. Army Scientific Advisory Panel (ASAP). Executive Com., 1954<br><br>Army. Army Scientific Advisory Panel (ASAP) Executive Com., 1955<br><br>Central Intelligence Agency (CIA)<br><br>Defense, Department of, Gen. Corr., 1954<br><br>Defense, Department of, Gen. Corr., 1955<br><br>Defense, Department of, Gen. Corr., 1956 |

Box No.   Contents

- 2      Defense, Department of, Gen. Corr., 1957 (1)  
(cont.)      Defense, Department of, Gen. Corr., 1957 (2)
- 3      Defense, Department of, Gen. Corr., 1958
- Defense, Department of, Gen. Corr., 1959 [Furnas to Senator Jackson, dtd. Nov. 18, 1959 re "The relationship of science and technology to the national security policy process."]
- Defense, Department of, Gen. Corr., 1960
- Defense, Department of, Gen. Corr., 1961
- Defense, Department of, Gen. Corr., 1962
- Defense, Department of, Gen. Corr., 1963
- Defense, Department of, Miscellaneous Reports
- Defense, Department of, Ass. Sec. of defense for Research & Development. 1955-61
- Defense, Department of, Ass. Sec. of Defense. Newspaper Clippings, 1955-58
- 4      Defense, Department of, Defense Science Board (DSB). Gen. Corr., 1962
- Defense, Department of, Defense Science Board (DSB). Gen. Corr., 1963
- Defense, Department of, Defense Science Board (DSB). Gen. Corr., 1964-66
- Defense, Department of, Defense Science Board (DSB). Executive Com., 1963-64 (1)
- Defense, Department of, Defense Science Board (DSB). Executive Com., 1963-64 (2)
- Defense, Department of, Defense Science Board (DSB). Gen. Corr., Subcommittee on DOD Research Policy, 1963-65
- Defense, Department of, Defense Science Board (DSB). Gen. Corr., Subcommittee on DOD Research Policy. Reports
- 5      Defense, Department of, Defense Science Board (DSB). Subcommittee on In-House Labs, 1960-61

Box No.   Contents

5      Defense, Department of, Defense Science Board (DSB). Subcommittee on In-House  
(cont.)      Labs, 1961 (1)

Defense, Department of, Defense Science Board (DSB). Subcommittee on In-House  
Labs, 1961 (2)

Defense, Department of, Defense Science Board (DSB). Subcommittee on In-House  
Labs, 1962-64

6      Defense, Department of, Defense Science Board (DSB). Subcommittee on In-House  
Labs, Reports (1)

Defense, Department of, Defense Science Board (DSB). Subcommittee on In-House  
Labs, Reports (2)

Defense, Department of, Defense Science Board (DSB). Subcommittee on Scientific  
& Tech. Info. (STINFO), 1962

Defense, Department of, Defense Science Board (DSB). Subcommittee on Scientific  
& Tech. Info. (STINFO), 1963

Defense, Department of, Tech. Advisory Panel on Aeronautics, 1954

Defense, Department of, Tech. Advisory Panel on Aeronautics, 1955

7      Executive Office of the President. Office of Science & Technology, 1962-65

Executive Office of the President. President's Science Advisory committee (PSAC),  
1960-68

Executive Office of the President. Office of Science & Technology 1962-65

Executive Office of the President. National Council on Marine Resources &  
Engineering Development, 1968-69

House of Representatives. Committee on Appropriations. Reliability Study Group,  
1958-59. (1) (2) [re guided missile systems]

House of Representatives. Committee on Government Operations, 1958. [Testimony  
re scientific research and development]

House of Representatives. Committee on Government Operations. Reports.

Box No.   Contents

- 8      House of Rep. Com. on Science & Astronauts (Miller Com.). Advisory Panel, 1960  
House of Rep. Com. on Science & Astronautics (Miller Com.). Advisory Panel, 1961  
House of Rep. Com. on Science & Astronautics (Miller Com.). Advisory Panel, 1962  
House of Rep. Com. on Science & Astronautics (Miller Com.). Advisory Panel, 1963  
House of Rep. Com. on Science & Astronautics (Miller Com.). Advisory Panel, 1964  
House of Rep. Com. on Science & Astronautics (Miller Com.). Advisory Panel, 1965  
House of Rep. Com. on Science & Astronautics (Miller Com.). Advisory Panel, 1966  
House of Rep. Com. on Science & Astronautics (Miller Com.). Advisory Panel, 1967  
House of Rep. Com. on Science & Astronautics (Miller Com.). Advisory Panel, 1968  
House of Rep. Com. on Science & Astronautics (Miller Com.). Advisory Panel, 1969  
House of Rep. Select Com. on Astronautics & Space Exploration Hearing, 1958  
House of Rep. Com. on Ways & Means [1958]  
House of Rep. Select Com. on Government Research [1963]  
Institute for Defense Analyses [pamphlets]
- 9      National Academy of Engineering (NAE). Gen. Corr., 1967  
National Academy of Engineering (NAE). Gen. Corr., 1968 (1)  
National Academy of Engineering (NAE). Gen. Corr., 1968 (2)  
National Academy of Engineering (NAE). Gen. Corr., 1969  
National Academy of Engineering (NAE). Com. on Public Eng. Policy (COPEP),  
1967-69  
National Academy of Engineering (NAE). Com. on Technological Assessment, 1967-  
69  
National Academy of Engineering (NAE). Com. on Transportation, 1968



Box No.   Contents

- 9  
(cont.)   National Academy of Engineering (NAE). Council, 1968-69  
National Academy of Engineering (NAE). Symposium at Ann Arbor, 1967
- 10   National Academy of Sciences (NAS). Gen. Corr., 1967-69  
National Academy of Sciences (NAS). Com. on Science, Eng., & Regional Development (Alpert Com.), 1967  
National Academy of Sciences (NAS). Com. on Science, Eng., & Regional Development (Alpert Com.). 1968-69  
National Academy of Sciences (NAS). National Research Council (NRC), 1968-69  
National Advisory Com. for Aeronautics (NACA). Gen. Corr., 1958 [after July 1958 see NASA]  
National Advisory Com. for Aeronautics (NACA) Com. on Aircraft Construction, 1952 (1) [after July 1958 see NASA]  
National Advisory Com. for Aeronautics (NACA) Com. on Aircraft Construction, 1952 (2)  
National Advisory Com. for Aeronautics (NACA) Com. on Aircraft Construction, 1953 (1)  
National Advisory Com. for Aeronautics (NACA) Com. on Aircraft Construction, 1953 (2)
- 11   National Advisory Com. for Aeronautics (NACA) Com. on Aircraft Construction, 1954 (1)  
National Advisory Com. for Aeronautics (NACA) Com. on Aircraft Construction, 1954 (2)  
National Advisory Com. for Aeronautics (NACA) Com. on Aircraft Construction, 1954 (3)  
National Advisory Com. for Aeronautics (NACA) Com. for Aircraft Construction, 1955 (1)  
National Advisory Com. for Aeronautics (NACA) Com. for Aircraft Construction, 1955 (2)

Box No.   Contents

11      National Advisory Com. for Aeronautics (NACA) Com. for Aircraft Construction,  
(cont.)      1955 (3)

National Aeronautics & Space Admin. (NASA). Gen. Corr., 1963-66 [before July  
1958 see NACA]

12      National Science Foundation Gen. Corr., 1968-69

Navy. Office of Naval Research. Gen. Corr., 1962, 1967, 1969

Navy. Naval Research Advisory Com. (NRAC). Gen. Corr., 1961-64

Navy. Naval Research Advisory Com. (NRAC). Gen. Corr., 1965-66

Navy. Naval Research Advisory Com. (NRAC). Gen. Corr., 1967

Navy. Naval Research Advisory Com. (NRAC). Gen. Corr., 1968 (1)

Navy. Naval Research Advisory Com. (NRAC). Gen. Corr., 1968 (2)

Navy. Naval Research Advisory Com. (NRAC). Gen. Corr., 1969

13      Navy. Naval Research Advisory Com. (NRAC). Ad Hoc Com. on Naval Applied  
Science Laboratories (NASL), 1967

Navy. Naval Research Advisory Com. (NRAC). Subcom. on Basic Research &  
Exploratory Development (6.1-6.2 Com.), 1967-68

Navy. Naval Research Advisory Com. (NRAC). Subcom. on Basic Research &  
Exploratory Development (6.1-6.2 Com.), Reports

Navy. Naval Research Advisory Com. (NRAC). Subcom. on Laboratory Advisory  
Boards, 1967 (1)

Navy. Naval Research Advisory Com. (NRAC). Subcom. on Laboratory Advisory  
Boards, 1967 (2)

Navy. Naval Research Advisory Com. (NRAC). Subcom. on Laboratory Advisory  
Boards, 1967 (3)

Navy. Naval Research Advisory Com. (NRAC). Subcom. on Laboratory Advisory  
Boards, 1968

Box No.   Contents

14

SPEECHES

List of Addresses, Printed Articles, Books, and Photographs

March 30-April 3, 1931. American Chemical Society, Indianapolis, Ind.

March 4, 1936. Annual Meeting of the American Ceramic Society, Buffalo, N.Y.

March 3, 1937. American Institute of New York City, New York, N.Y.

May 13, 1937. Purdue Club of New York City Annual Dinner, New York, N.Y.

October 10, 1937. American Institute of New York City. New York, N.Y.

November 1, 1937. Teachers' College, Columbia University, New York, N.Y.

May 9-11, 1938. American Institute of Chemical Engineers. White Sulphur Springs. Md.

October 8, 1938. Regional Meeting of the Soc. for the Promotion of Eng. Education. Orono, Maine

Feb. 28, 1939. Joint Session National Association for Research in Science Teaching & Society for Curriculum Study. Cleveland, Ohio

Feb. 27, 1939. Central Penn. Seventh Dist. Dental Society. Altoona, Pa.

Nov. 24, 1939. Central Assoc. of Science & Mathematics Teachers. Chicago, Ill.

Dec. 5, 1939. Greater N.Y. Dental Meeting. New York, N.Y.

May 20-22, 1940. American Gas Assoc. New York, N.Y.

April 11, 1941. Radio Talk-Sta. WGY. Schenectady, N.Y.

June 6, 1941. Eastern States Blast Furnace & Coke Oven Association. Pittsburgh, Pa.

Oct. 4, 1941. American Chemical Society. Rochester, N.Y.

Feb. 14, 1946. Thursday Club. Buffalo, N.Y.

Nov. 12, 1946. 26th Annual Meeting of the American Petroleum Institute. Chicago, Ill.

Box No.   Contents

14      Jan. 30, 1948. Commencement Address, Buffalo Seminary. Buffalo, N.Y.  
(cont.)

May 3, 1948. Radio Talk - Sta. WVBR. Ithaca, N.Y.

April 29, 1949. Aircraft Safety Talk. Wichita, Kansas

April 29, 1949. Sixth Annual Personal Aircraft Meetings, Wichita, Kansas

May 7, 1949, A.I.C. Annual Meeting. Chicago, Illinois

Nov. 25, 1949. Central Assoc. of Science & Mathematics Teachers. Chicago, Illinois

May 4, 1950. 1950 Niagara Dinner of the Newcomen Society of England. Buffalo, N.Y.

Dec. 27, 1950. Annual Meeting of AAAS (Eng. Section) & Cleveland Eng. Society. Cleveland, Ohio

March 7, 1951. Annual Meeting of Bituminous Coal Research, Inc. Columbus, Ohio

June 27, 1951. Aeronautical Div., American Society for Eng. Education. Lansing, Michigan

June 26, 1952. Annual Meeting of the American Society for Eng. Education

Sept. 5, 1952. Eng. College Research Council. Chicago, Ill.

Sept. 5, 1952. Cornell Society of Eng. Chicago, Ill.

Jan.27, 1953. Institute of the Aeronautical Sciences 21st Meeting. New York, N.Y.

Feb. 12, 1953. Thursday Club. Buffalo, N.Y.

Feb. 24, 1953. Controllers Institute of America. Buffalo, N.Y.

Aug. 25, 1954. Cornell Aeronautical Lab, Inc. Lab League Testimonial. Buffalo, N.Y.

Oct. 21, 1954. Medical Participating Fund Dinner. Buffalo, N.Y.

Dec. 3, 1954. National Assoc. Of Mfgs. , New York, N.Y.

Jan. 7, 1955. Inaugural Address as Chancellor, University of Buffalo, Buffalo, N.Y.

May 6, 1955. Hutchinson Central Tech. High School, Buffalo, N.Y.

Box No.   Contents

- 14      June 5, 1955. Commencement Day Address, University of Buffalo, Buffalo, N.Y.  
(cont.)      Dec. 2, 1955. Cornell Aeronautical Laboratory. Buffalo, N.Y.
- 15      Jan. 11, 1956. Army-Navy-Air Force Elastomer Conference, Washington, D.C.  
      March 3, 1956. Science Talent Search. Washington, D.C.  
      March 9, 1956. Institute of the Aeronautical Sciences. Cleveland, Ohio  
      March 15, 1956. American Society of Mechanical Engineers. Los Angeles. California  
      March 22, 1956. Division 15 Alumni Group of ORSD. New York, N.Y.  
      March 23, 1956. National Association of Mfgs. New York, N.Y.  
      March 27, 1956. Naval Research Lab. Washington, D.C.  
      April 2, 1956. U.S. Naval Powder Factory. Indian Head, Md.  
      April 11, 1956. U.S.A.F. Scientific Advisory Board. Elgin AFB, Florida  
      April 17, 1956. 7th Tripartite Armaments Explosives & Propellants Conference.  
      Naval Ordnance Lab. White Oak. Md.  
      April 17, 1956. Am. Society of Mech. Engineers, Washington, D.C.  
      April 19, 1956. National Ind. Research Conference. Chicago, Ill.  
      April 19, 1956. Chemical Progress Week. Chicago, Ill.  
      May 10, 1956. National Security Ind. Assoc. New York, N.Y.  
      May 19, 1956. Armed Forces Day Com. of Buffalo. Buffalo, N.Y.  
      May 25, 1956. National Resources Council, Buffalo, N.Y.  
      May 28, 1956. Material Officers Reserve Group. Washington, D.C.  
      June 11, 1956. 7th Annual Conference on Industrial Research, Columbia University,  
      Harriman, N.Y.  
      June 15, 1956. Armed Forces Chemical Assoc., Boston, Mass.

Box No.   Contents

15      June 21, 1956. National Com. for the Div. of Scientists & Eng. & the Thomas Alva  
(cont.)      Edison Foundation. West Orange, N.J.

June 28, 1956. Am. Society for Eng. Education Annual Banquet. Ames, Iowa

June 29, 1956. Am. Institute of Chemists. Buffalo, N.Y.

Sept. 11, 1956. Am. Institute of Chemical Eng. Pittsburgh, Pa.

Sept. 25, 1956. Am. Rocket Society. Buffalo, N.Y. (1)

16      Sept. 25, 1956. American Rocket Society, Buffalo, N.Y. (2)

Oct. 4, 1956. Joint Civilian Orientation Conference #23. Washington, D.C.

Oct. 9, 1956. Los Alamos Scientific Laboratory. Los Alamos, N.M.

Oct. 9, 1956. Inter-Range Instrumentation Group. Cloudcraft, N.M.

Oct. 11, 1956. Hughes Aircraft Management Club. Los Angeles, California

Oct. 17, 1956. Industrial College of the Armed Forces. Washington, D.C.

Nov. 2, 1956. British Aircraft Industry and Government Officials. Washington, D.  
C.

Nov. 9, 1956. Buffalo Chapter of the Am. College of Surgeons & the Buffalo  
Surgical Society. Buffalo, N.Y.

Nov. 25, 1956. B'Nai B'rith Interfaith Dinner. Niagara Falls, N.Y.

Nov. 26, 1956. The Canadian Aeronautical Institute & the Institute of the  
Aeronautical Sciences. Toronto, Canada

Dec. 7, 1956. Army War College. Carlisle Barracks, Pa.

Dec. 10, 1956. Worcester Polytechnic Institute. Worcester, Mass.

Dec. 11, 1956. National Security Industrial Assoc., Washington, D.C.

Dec. 17, 1956. Comments on the Wright Bros. Lecture, 1956, Washington, D.C.

Jan. 7, 1957. Am. Institute of Chemical engineers. Washington, D.C.

Box No.   Contents

- 16      Jan 9, 1957. National Security Industrial Association. Washington, D.C.  
(cont.)      Jan. 21, 1957. Assoc. for Applied Solar Energy Meeting. Phoenix, Arizona  
  
            Jan. 31, 1957. 9th Annual College-Industry Conference. Los Angeles, California  
  
            March 31, 1957. 8th Annual N.Y. State Assoc. for Supervision and Curriculum  
            Development. Buffalo, N.Y.  
  
            June 3, 1957. Meeting of the American Society of Civil Engineers. Buffalo, N.Y.  
  
            June, 1957. Commencement Address, University of Buffalo. Buffalo, N.Y.  
  
            May 8, 1957. Buffalo Chamber of Commerce. Buffalo, N.Y.  
  
            May 16, 1957. The Age of Space. Birmingham, Ala.  
  
            Sept. 25, 1957. Regional Technical Meeting of American Iron and Steel Institute.  
            Buffalo, N.Y.  
  
            Sept 27, 1957. Associated Industries of New York State, Inc. Lake Placid, N.Y.  
  
            Oct. 14, 1957. Economic Club of Detroit. Detroit, Mich.  
  
            Nov. 22, 1957. "The Nest Hundred Years" Scientific Symposium. New York, N.Y.
- 17      Jan. 27, 1958. New York State Society of Newspaper Editors. Elmira, N.Y.  
  
            Feb. 6, 1958. Joint Meeting of the Chemical Buyers' Group of N.A.P.A. & the Chem.  
            Mkt. Research Assoc. Washington, D.C.  
  
            Feb. 11, 1958. Address to N.Y. Section SAE. New York, N.Y.  
  
            April 23, 1958. AIChE "Future Sources of Energy" Symposium. Montreal, Canada.  
  
            April 28, 1958. Second Annual AFOST Astronautics Symposium. Denver,  
            Colorado.  
  
            May 21, 1958. 66th General Meeting of Am. Iron & Steel Institute. New York, N.Y.  
  
            June 8, 1958. Commencement Address, University of Buffalo. Buffalo, N.Y.  
  
            June 9, 1958. Commencement Address, State University Teachers College.  
            Brockport, N.Y.

Box No.   Contents

17      June 17, 1958. Conference of Institutes and Community Colleges. Farmingdale,  
(cont.)   N.Y.

July 2, 1958. National Education Association. Cleveland, Ohio.

Sept. 19, 1958. Amherst Central Adult School. Amhurst, Mass.

Sept. 23, 1958. Niagara Falls Industrial Management Club. Niagara Falls, N.Y.

Oct. 11, 1958. Faculties Assoc. Conference. Syracuse, N.Y.

Oct. 13, 1958. General Electric Management Institute. Crotonville, N.Y.

Oct. 16, 1958. Energy Resources Conf. Denver, Colo.

Nov. 17, 1958. Midwest Research Institute. Kansas City, Missouri

Jan. 15, 1959. Printing Week Banquet. Buffalo, N.Y.

April 22, 1959. Address to the Urban League. Buffalo, N.Y.

June 1, 1959. Commencement Address, Wagner College. Grymes Hill, N.Y.

June 7, 1959. Commencement Address, University of Buffalo. Buffalo, N.Y.

June 16, 1959. Annual Convention of the Junior Chamber of Commerce. Buffalo, N.Y.

July 13, 1959. The American College Public Relation Assoc. French Lick, Ind.

Nov. 1, 1959. 45th Annual Meeting of the Assoc. of Urban Universities. Buffalo, N.Y.

Nov. 6, 1959. Pittsburgh Chapter AIME. Pittsburgh, Pa.

Jan. 7, 1960. Millard Fillmore Anniversary. Buffalo, N.Y.

Feb. 24, 1960. Annual Dinner, Engineering Council. Binghamton, N.Y.

June 8, 1960. Buffalo-Niagara Frontier Business Federation, Inc. Buffalo, N.Y.

June 12, 1960. Commencement Address, University of Buffalo. Buffalo, N.Y.

Sept. 15, 1960. 8th Annual Engineering Management Conference. Chicago, Ill.



Box No.   Contents

- 17      Oct. 13, 1960. Honors Convocation, Thiel College. Greenville, Pa.  
(cont.)
- Jan. 13, 1961. Ground breaking for Boettcher Center for Eng. & Research, University of Denver. Denver, Colo.
- Jan. 23, 1961. Institute of the Aerospace Sciences. New York, N.Y.
- March 27, 1961. Buffalo-Niagara Sales Executives and Purch. Agents Assoc. of Buffalo. Buffalo, N.Y.
- April 4, 1961. Federal Placement Agency Conference, University of Buffalo. Buffalo, N.Y.
- May 5, 1961. Buffalo Chap. of the Reserve Officers Assoc. of the United States. Buffalo, N.Y.
- May 10, 1961. Polytechnic Institute of Brooklyn. Farmingdale, N.Y.
- June 8, 1961. The Thousand Plus Club. Buffalo, N.Y.
- June 11, 1961. Commencement Address, University of Buffalo. Buffalo, N.Y.
- August 25, 1961 Talk to 6th Army, R&D Scientific Seminar. Davis, California
- Oct. 20, 1961. 9th Annual CORE Conf. Buffalo, N.Y.
- Dec. 4, 1961. Eastern Assoc. of College and University Business Officers. Philadelphia, Pa.
- Jan. 20, 1962. University of Buffalo Convocation. Buffalo, N.Y.
- Feb. 12, 1962. The Twentieth Century Club. Pittsburgh, Pa.
- March 25, 1962. Greek Independence Day. Buffalo, N.Y.
- April 7, 1962. University of Buffalo. Buffalo, N.Y.
- April 30, 1962. ASME Design Engineering Conference. Chicago, Ill.
- 18      May 15, 1962. Schoellkopf Medal Address. Niagara Falls, N.Y.
- June 10, 1962. Commencement Address, University of Buffalo. Buffalo, N.Y.
- June 30, 1962. Assoc. of Governing Boards Meeting. Portsmouth, N.H.

Box No.   Contents

18      July 19, 1962. Summer Institute, Bucknell University. Lewisburg, Pa.  
(cont.)      August 13, 1962. 1962 Pacific Energy Conversion Conference. San Francisco, Calif.  
  
            Sept. 22, 1962 Capen Hall Junior Red Cross  
  
            Sept. 26, 1962. Army War College. Carlisle Barracks, Pa.  
  
            Dec. 29, 1962 Tau Beta Pi Lecture. Philadelphia, Pa.  
  
            Feb. 14, 1963 Thursday Club. Buffalo, N.Y.  
  
            March 7, 1963. The Advisory Council for the Advancement of Ind. Research & Dev.  
            in N.Y. State & Polytechnic Inst. of Brooklyn. Long Island, N.Y.  
  
            June 2, 1963. Commencement Address, University of Buffalo. Buffalo, N.Y.  
  
            June 20, 1963. American Institute of Aeronautics & Astronautics. Los Angeles,  
            California  
  
            Nov. 7, 1963. Columbia University Advisory Council for the Advancement of Ind.  
            Research & Dev. Conf. New York, N.Y.  
  
            Nov. 25, 1963. Special Ceremony to Pay Respects to the Late President John F.  
            Kennedy. Buffalo, N.Y.  
  
            May 1, 1964. Executive Seminar Center. Kings Point, N.Y.  
  
            May 31, 1964. Commencement Address, University of Buffalo. Buffalo, N.Y.  
  
            June 18, 1964. First International Conf. of the Women Engineers & Scientists. New  
            York, N.Y.  
  
            Nov. 9, 1964. ACAIRD Conference. Rochester, N.Y.  
  
            Jan. 28, 1965. National Newcomen Dinner. New York, N.Y.  
  
            May 30, 1965. Commencement Address, University of Buffalo, Buffalo, N.Y.  
  
            June 24, 1965. Governor's Library Conf. Albany, N.Y.  
  
            Oct. 6, 1965. Industrial & Commercial Power Systems Conference. Buffalo, N.Y.  
  
            Nov. 9, 1965. American Petroleum Institute, 45th Annual Meeting. Chicago, Illinois

Box No.   Contents

- 18      Dec. 1, 1965. Citation Banquet of National Conference of Christians and Jews.  
(cont.)      Buffalo, N.Y.
- Dec. 14, 1965. The Third Institute on Administration: The Medical Center & the University. Bal Harbour, Florida
- Feb. 2, 1966. International Conference on Urban Transportation. Pittsburgh, Pa.
- March 23, 1966. Twentieth Century Club. Buffalo, N.Y.
- April 19, 1966. Testimonial Dinner. Buffalo, N.Y.
- May 4, 1966. Society of Sigma XI.
- May 29, 1966. Commencement Address, University of Buffalo, Buffalo, N.Y.
- June 17, 1966. Conference on the Fresh Water of New York State
- July 26, 1966. Presidents' Conference. Hamilton, N.Y.
- Oct. 11, 1966. Akron Council of Engineers and Scientific Societies. Akron, Ohio.
- May 17, 1967. Chamber of Commerce Luncheon. Buffalo, N.Y.
- Sept. 21, 1967. National Academy of Engineering. Ann Arbor, Michigan
- May 16, 1968. I.B.M. Institute Seminar. Buffalo, N.Y.

ARTICLES

- 19      1926. The Thermal Properties of Ferric Oxide
- May, 1929. Gas-Solid Contact in the Shaft of a 700-Ton Blast Furnace
- December, 1929. Controlling Furnace Burden by Gas Analysis
- June, 1930. Evaluation of the Modified Bessel Function of the First Kind and Zeroth Order
- Sept. 1931. Grading Aggregates
- Jan. 16, 1932. Coming: The Age of Leisure
- August, 1932. Temperature Controller Uses Photoelectric Cell

Box No.   Contents

19 (cont.)	July, 1933. <u>Gas Bubbler for Very Small Pressure Drops</u>
	July, 1934 <u>Heat Transfer Involving Turbulent Fluids</u>
	Sept. 1934. <u>The Rate of Reduction of Iron Ores with Carbon Monoxide</u>
	June, 1935 <u>Vapor-liquid Equilibrium Data for Commercially Important Systems of Organic Solvents</u>
	Feb., 1936 <u>Chemical Engineer's Role in America's Future</u>
	May, 1936 <u>Solid Carbon Reactivity</u>
	June, 1936. <u>Commercially Important Systems of Organic Solvents</u>
	Nov. 9, 1936 <u>History in The Making</u>
	1937. <u>A Review of the Principles of Gas Scrubbing</u>
	Jan. 1939. <u>Man's Use of Materials and Energy</u>
	June, 1939. <u>Science Marches On</u>
	March, 1940. <u>Distillation in Packed Columns</u>
	Jan. 1942. <u>Concentration of Dilute Solutions of Electrolytes by Base-Exchange Materials</u>
	March, 1942. <u>Future Sources of Power</u>
	April, 1942. <u>Distillation in a Wetted-Wall Tower</u>
	Feb., 1943. <u>Future Sources of Power</u>
	May, 1943. <u>A Pattern for Aviation Research</u>
	Nov., 1943. <u>Some Chemical Problems in Aircraft Manufacture</u>
	June 15, 1944. <u>An Iodine Number Method for Tall Oil</u>
	Oct. 26, 1945. Press Release of Curtiss-Wright Corp.
	July, 1948. <u>Bridging the Gap</u>
	August, 1948. <u>On Being Resourceful</u>

<u>Box No.</u>	<u>Contents</u>
19 (cont.)	<p>April, 1950. <u>American Education in a Quandary</u></p> <p>1953. <u>"Science and Technology"</u></p> <p>Oct. 11, 1955. <u>A Look at Next 75 Years</u></p> <p>Jan. 12, 1957. <u>Defense Department: Leading Patron of the Sciences</u></p> <p>Jan., 1957. <u>The Vanguard Satellite</u></p> <p>Oct. 21, 1957. <u>Why Did U.S. Lose the Race? Critics Speak Up</u></p> <p>Nov., 1958. <u>Global Energy Sources and Their Depletion</u></p> <p>Jan., 1959. <u>Electronics and National Defense</u></p> <p>June, 1959. <u>The Role of Research in the Economics of Universities</u></p> <p>June 26, 1961. <u>Education in the Niagara Frontier</u></p> <p>March, 1964. <u>The University and the Community</u></p> <p>June, 1964. <u>Trip Report of Visit to National University of Asuncion in Paraguay</u></p> <p>Spring, 1970. <u>Birthpangs of the First Satellite</u></p> <p>Biography and Obituary</p>

END OF CONTAINER LIST